

WHAT IS CLAIMED IS:

1. An information storage medium evaluation method for evaluating an information storage medium, which comprises a wobbled track that is used to guide a light beam and is wobbled in correspondence with a frequency, a phase of which is modulated at predetermined timings to reflect predetermined information, comprising:

squaring a reproduction signal corresponding to the wobbled track, obtained from reflected light of the light beam with which the wobbled track is irradiated; and

evaluating quality of the wobbled track on the basis of frequency characteristics of the squared reproduction signal.

2. A method according to claim 1, wherein when a difference between peak and noise levels obtained from the frequency characteristics of the squared reproduction signal becomes not less than 17 dB, it is determined that the quality of the wobbled track meets a predetermined standard.

3. An information storage medium evaluation apparatus for evaluating an information storage medium, which comprises a wobbled track that is used to guide a light beam and is wobbled in correspondence with a frequency, a phase of which is modulated at predetermined timings to reflect predetermined

information, comprising:

a detection unit configured to detect reflected light of a light beam with which the wobbled track formed on the information storage medium is irradiated;

5 a filter unit configured to suppress noise from a reproduction signal corresponding to the wobbled track on the basis of the reflected light detected by the detection unit;

10 a squaring unit configured to square the reproduction signal from which the noise is suppressed by the filter unit; and

15 an evaluation unit configured to evaluate quality of the wobbled track on the basis of frequency characteristics of the squared reproduction signal squared by the squaring unit.

4. An apparatus according to claim 3, wherein when the squaring unit squares a predetermined sine wave and outputs the squared sine wave, a peak level at a predetermined frequency obtained from frequency  
20 characteristics of the sine wave appears at a frequency twice the predetermined frequency in frequency characteristics of the squared sine wave, and

25 the evaluation unit has characteristics that set a residual peak level corresponding to a residual level in a carrier component obtained from the frequency characteristics of the squared sine wave to be lower by not less than 30 dB than a peak level that appears at

the frequency twice the predetermined frequency.

5           5. An apparatus according to claim 3, wherein  
when the squaring unit multiplies a predetermined sine  
wave containing a noise component and outputs the  
squared sine wave, a peak level at a predetermined  
frequency obtained from frequency characteristics of  
the sine wave appears at a frequency twice the  
predetermined frequency in frequency characteristics of  
the squared sine wave, and  
10           the evaluation unit has characteristics that set a  
difference between a first difference between peak and  
noise levels obtained from the frequency charac-  
teristics of the sine wave and a second difference  
between peak and noise levels obtained from the  
15           frequency characteristics of the squared sine wave to  
be not more than 7 dB.

          6. An information storage medium for storing  
information, comprising:

          an information storage area for storing  
20           information; and

          a wobbled track which is used to guide a light  
beam on the information storage area, and is wobbled in  
correspondence with a frequency, a phase of which is  
modulated at predetermined timings to reflect  
25           predetermined information,

          wherein the wobbled track is formed so that when  
a reproduction signal corresponding to the wobbled

track obtained from reflected light of a light beam,  
with which the wobbled track is irradiated, is squared,  
and the squared reproduction signal is evaluated on the  
basis of frequency characteristics of the squared  
5 reproduction signal, a difference between peak and  
noise levels obtained from the frequency  
characteristics of the squared reproduction signal  
becomes not less than 17 dB.

7. A medium according to claim 6, wherein the  
10 wobbled track is formed so that

a peak level at a predetermined frequency obtained  
from frequency characteristics of the reproduction  
signal appears at a frequency twice the predetermined  
frequency in the frequency characteristics of the  
15 squared reproduction signal, and

a residual peak level corresponding to a residual  
level in a carrier component obtained from the  
frequency characteristics of the squared reproduction  
signal is lower by not less than 30 dB than the peak  
20 level which appears at the frequency twice the  
predetermined frequency.

8. An information reproduction apparatus for  
reproducing information from an information storage  
medium on which a wobbled track, which is wobbled at a  
25 frequency, a phase of which is modulated at predeter-  
mined timings to reflect predetermined information, is  
formed, so that an evaluation result based on frequency

characteristics of a squared reproduction signal  
obtained by squaring a reproduction signal  
corresponding to the wobbled track, obtained from  
reflected light of a light beam with which the wobbled  
5 track is irradiated, meets a predetermined evaluation  
measure, comprising:

a detection unit configured to detect the  
reflected light of the light beam with which the  
wobbled track formed on the information storage medium  
10 is irradiated; and

a reproduction unit configured to reproduce the  
predetermined information reflected on the wobbled  
track on the basis of the reflected light detected by  
the detection unit.

15 9. An information reproduction method for  
reproducing information from an information storage  
medium on which a wobbled track, which is wobbled at a  
frequency, a phase of which is modulated at predeter-  
mined timings to reflect predetermined information, is  
20 formed, so that an evaluation result based on frequency  
characteristics of a squared reproduction signal  
obtained by squaring a reproduction signal  
corresponding to the wobbled track, obtained from  
reflected light of a light beam with which the wobbled  
25 track is irradiated, meets a predetermined evaluation  
measure, comprising:

detecting the reflected light of the light beam

with which the wobbled track formed on the information storage medium is irradiated; and

reproducing the predetermined information reflected on the wobbled track on the basis of the  
5 detected reflected light.

10. An information recording method for recording information on an information storage medium on which a wobbled track, which is wobbled at a frequency, a phase of which is modulated at predetermined timings to  
10 reflect predetermined information, is formed, so that an evaluation result based on frequency characteristics of a squared reproduction signal obtained by squaring a reproduction signal corresponding to the wobbled track, obtained from reflected light of a light beam with  
15 which the wobbled track is irradiated, meets a predetermined evaluation measure, comprising:

detecting the reflected light of the light beam with which the wobbled track formed on the information storage medium is irradiated;

20 reproducing the predetermined information reflected on the wobbled track on the basis of the detected reflected light; and

recording information on the information storage medium on the basis of the reproduced predetermined  
25 information.